M. STANNARD.

Hydraulic Adjustable Presses

No. 167,202. Patented Aug. 31, 1875.

Fig. 1.

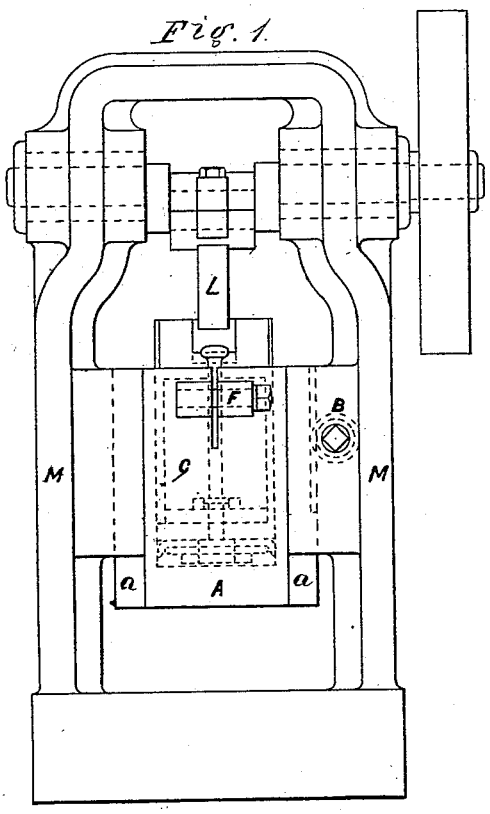
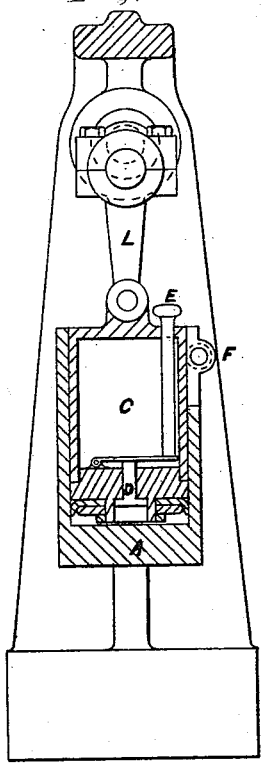


Fig. 2.



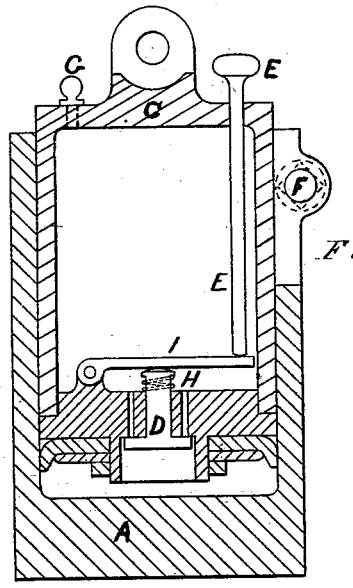


Fig. 3.

Witnesses.

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MONROE STANNARD, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN HYDRAULIC ADJUSTABLE PRESSES.

Specification forming part of Letters Patent No. **167,202**, dated August 31, 1875; application filed June 25, 1875.

To all whom it may concern:

Be it known that I, MONROE STANNARD, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Hydraulic Adjustable Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My invention relates to such presses as are used for punching and trimming metals, and for other similar purposes; and it consists in devices by which the height of the punch or other tool can be adjusted and set in position with great facility and accuracy.

In the accompanying drawing, Figure 1 is a front view of a machine embodying my improvements. Fig. 2 is a side view of the same, showing a section through the middle. Fig. 3 is a detached enlarged view of a section through the middle of the plunger.

A is a hollow cylindrical shell, with a solid bottom, and open at the top. The bottom is made to receive the punch or other tool, and the sides are furnished with vertical flanges *a*, which move in grooves in the frame M of the machine. One of these flanges is cut into a rack to receive the leaves of a pinion, B, by which the cylinder may be raised or lowered. C is also a hollow cylinder, having a solid top, which is furnished with ears for jointing it to the connecting-rod L, which gives it a reciprocating vertical motion by means of a crank. The cylinder C is accurately fitted within the cylinder A, and has at its lower end a piston, with suitable packing, exactly fitting the cylinder A, so as to preserve a tight joint. In this piston is placed a valve, D, opening downward, and held to its seat by means of the spring H. This valve is operated by the lever I and vertical rod E, which passes through the top of the cylinder C, and terminates in a knob, by pressing which the valve is opened. G is a plug or cock in the top of C, which is opened to fill the interior with a liquid, as glycerine, oil, or water. The first is preferred, as less liable to be affected by changes of temperature. F is a screw-clamp, by tightening which the cylinder A is firmly clasped around C, to hold them together when adjusted to the proper position. The cylinder A is split a short distance from the top for this purpose.

When it is desired to adjust the position of the slide A, the knob of the rod E is pressed downward, and the pinion B is turned so as to bring A to the proper height. A nice adjustment of position may be made while A is descending by just touching the knob, so as to admit but very little of the contained liquid through the valve D. When the desired adjustment is made the clamp F is turned to hold the parts in place.

Instead of the pinion B, a worm can be used to operate the rack.

What I claim as my invention is—

1. A trimming or punching press, the slide of which is adjustable by means of a rack and pinion or its equivalent, and also by means of a hollow cylinder, receiving a hollow plunger containing a liquid, which may be allowed to flow into the hollow cylinder or back into the hollow plunger by means of a valve changing their relative positions, and accurately setting the punch or die at any height required, substantially as described.

2. The combination of the devices A, B, C, D, and E, for the purpose of adjusting the relative positions of A and C, substantially as described.

3. The clamping device F, in combination with A and C, and the devices by which they are set in position, substantially as described.

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Witnesses:

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